(2 S.)

SHEET 1.

293. VEHICLE FENDERS.
8

# Fig. 1.

(Section through car)




11/1896

ENGLISH 27008 of 1896

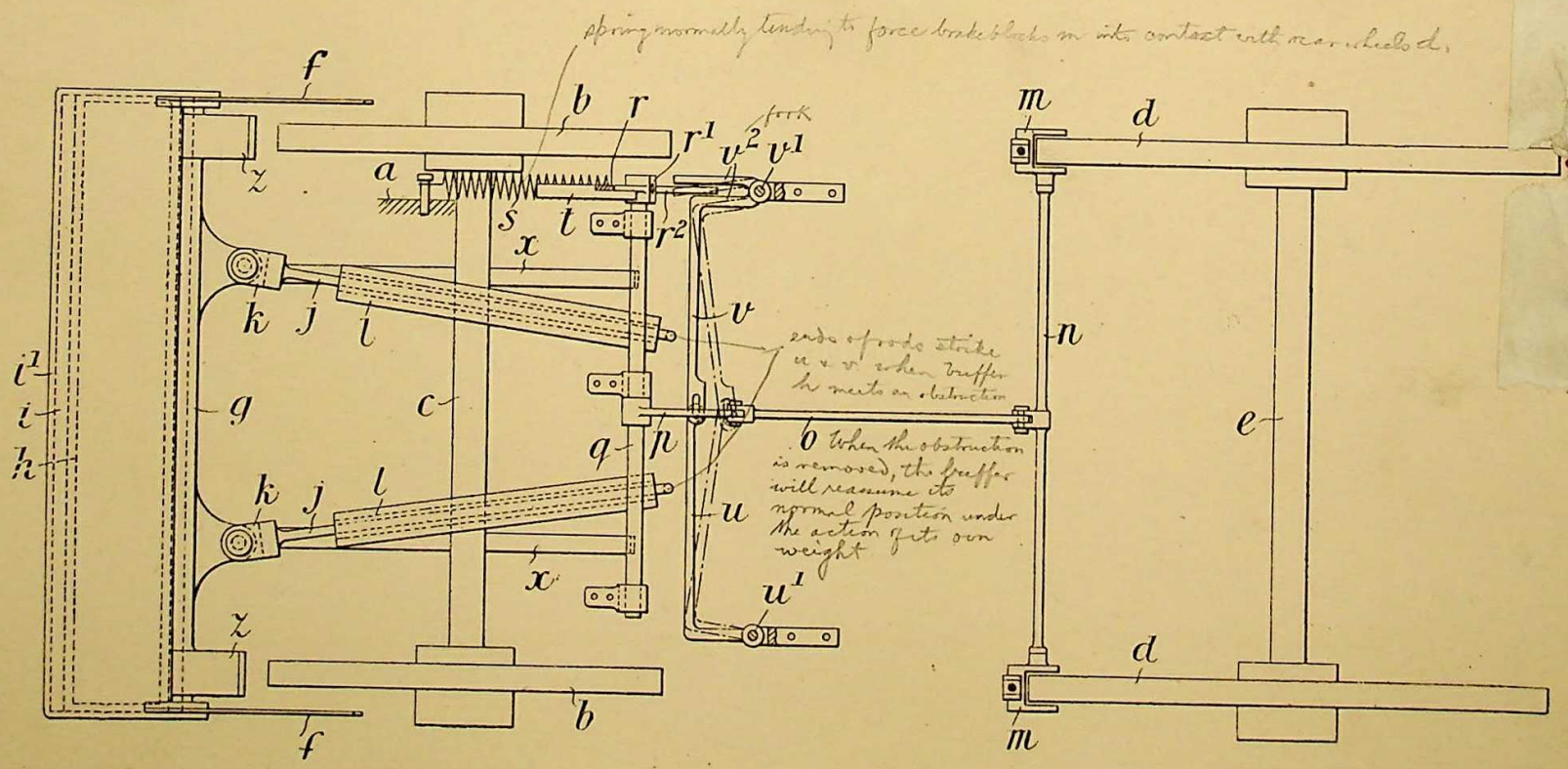
293. VEHICLE FENDERS.

ENGLISH 27008 of 1896

A.D. 1896. Nov. 27. N°. 27,008.
PELLAS & another's COMPLETE SPECIFICATION.

SHEET 2.

Fig 2.




CS. RAILWAY RE-ING CHECK.
Wheel Fenders, Combined Brake.

34

# N° 27,008 A.D. 1896

*Date of Application, 27th Nov., 1896*
*Complete Specification Left, 27th Aug., 1897—Accepted, 27th Nov., 1897*

DUPLICATE

PROVISIONAL SPECIFICATION.

## Improvements in and connected with Brake Mechanism for Motor and other Cars and Vehicles.

We, EUGENIO PELLAS, of Broad Street Avenue, in the City of London, Gentleman, and SALVATORE FOSSATI, of 6, Blue Cross Street, Leicester Square, in the County of London, Engineer, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in and connected with brake mechanism for motor or self-propelled and other vehicles for common roads and has for its object to provide automatic means whereby, when the vehicle comes in contact with any obstacle, the brake is automatically applied to the wheels and is maintained in contact with the said wheels until released therefrom by the driver or attendant.

According to our invention we provide the front of the vehicle with a projecting or buffer portion free to move when it comes in contact with an obstacle and we connect this movable portion with the brake block or band by suitable means so that when the said buffer portion of the vehicle meets with a predetermined resistance the brake is applied and we also provide means whereby the brake when applied is maintained in contact with the wheel until released therefrom.

A suitable arrangement for carrying out our invention consists of a rod connected to the buffer portion of the vehicle and normally held in its outermost position by a spring and so arranged that when pushed inwards its inner end strikes against a link pivoted at one end to the frame of the vehicle and at the other to two levers one of which is pivoted to the brake block and the other to a hand lever which engages with a notched sector. By this construction when the front buffer portion of the vehicle is pushed inwards the pivoted link forces the brake block against the wheel and also rotates the hand lever so that it engages with one of the notches in the sector and thereby prevents the brake block from leaving the wheel. The brake will be applied also when an obstacle collides with the sides of the buffer portion of the vehicle.

Or we may provide, in connection with the brake block, a spring adapted to force the brake block against the wheel or apply the brake band with the necessary pressure but which is normally held in compression by a suitable catch adapted to be released when the buffer portion of the vehicle meets with an obstacle.

In practice we find it advantageous to provide the front portion of the vehicle with a projecting guard near the surface of the ground and so arranged that, should the vehicle collide with a person, the said person instead of being run over by the vehicle would be slid on to the said guard and we also provide our buffer arrangement with ropes both inside, outside and underneath the same so that even should a person be knocked down by the vehicle he can clutch one of the ropes and so by his weight apply the brake to the vehicle.

Dated this 27th day of November 1896.

G. F. REDFERN & Co.,
4, South Street, Finsbury, London, Agents for the Applicants.

[*Price 8d.*]

## COMPLETE SPECIFICATION.

# Improvements in and connected with Brake Mechanism for Motor and other Cars and Vehicles.

We, EUGENIO PELLAS, of Broad Street Avenue, in the City of London, Gentleman, and SALVATORE FOSSATI, of 6, Blue Cross Street, Leicester Square, in the County of London, Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to improvements in and connected with brake mechanism for motor or self-propelled and other vehicles for common roads and has for its object to provide means whereby, when the vehicle comes in contact with any obstacle, the brake is automatically applied to the wheels and is maintained in contact with the said wheels until released therefrom by the driver or attendant.

According to our invention we provide the front of the vehicle with a projecting or buffer portion free to move when it comes in contact with an obstacle and we connect this movable portion with the brake-block or band by suitable means so that when the said buffer portion of the vehicle meets with a predetermined resistance the brake is applied and we also provide means whereby the brake, when applied, is maintained in contact with the wheel until released therefrom.

In a suitable arrangement for carrying out our invention we connect the brake-blocks to a rocking-shaft having a hand lever, connected to it by a ball or other joint and provided with a spring which normally tends to apply the brake-blocks to the wheels of the car but which can be caused to engage with a notched sector so as to hold the brake-blocks out of contact with the said wheels. To disengage the hand lever from the sector when the buffer portion of the car strikes an obstacle we pivot two rods to the said buffer portion the said rods passing through guides secured to the front axle of the car and being adapted, when the said buffer portion is pressed inwards on meeting with a predetermined resistance, to strike with their inner ends against two links or arms pivoted to the frame-work of the car and one of which is provided with a fork which engages with an extension of the hand lever so as to disengage it from the notched sector when the said link is turned on its pivot.

In practice we find it advantageous to provide at the bottom of the buffer or projecting portion of the car a cross-bar having rearwardly projecting rods passing through guides on the front axle of the car, the said rods being adapted to operate the brake mechanism in the manner hereinbefore described should the car come in contact with a person or obstacle too low to be struck by the buffer portion.

To enable our invention to be fully understood we will describe it by reference to the accompanying drawings, in which :—

Figure 1 is a longitudinal vertical section through a motor car having brake mechanism constructed according to our invention ; and,

Figure 2 is a plan thereof.

*a* is the body of the car (only the front part of which is shewn in the drawing), *b*, *b* are the front wheels of the car, the said wheels being mounted upon the axle *c* and *d*, *d* are the rear wheels of the car, the said wheels being mounted upon the axle *e*.

The buffer which we arrange in front of the steering wheels of the car consists of the two lateral plates *f*, *f* having a curved cross piece *g* in which is mounted a pneumatic cushion consisting of an inner or air chamber *h* surrounded by a layer *i* of cotton or other suitable substance, the said cotton or other layer being enclosed in a protective covering $i^1$ preferably of leather, which is secured to the cross piece *g* as clearly shewn in Figure 1.

*j*, *j* are the rods pivoted by knuckle-joints *k*, *k* to the cross-piece *g* and passing through guides *l*, *l* fixed to the front axle *c*. The holes through these guides *l*, *l* are made somewhat oval or flattened in cross section, that is to say, are made longer in width than they are in height so that the rods *j*, *j* can move laterally therein. The buffer portion is supported on the car by the movable rods *j* and the fixed guides *l*.

*m*, *m* are the brake-blocks which are suspended in the ordinary manner from the carriage body, the said blocks being secured together by a cross-bar *n* connected by a rod *o* to an arm *p* rigidly secured to the rocking-shaft *q* which is rotatably mounted underneath the carriage body as shewn. *r* is the hand lever which is connected by a knuckle joint $r^1$ to the rocking-shaft *q* so that it can move relatively to the latter in a plane passing through the axis of the said shaft, and *s* is the spring connected to the body of the car and to the said hand lever *r* so as to normally tend to force the brake-blocks *m*, *m* into contact with the rear wheels *d*, *d* of the car. *t* is the notched sector with which the hand lever *r* can be engaged so as to hold the brake-blocks *m* out of contact with the said rear wheels. In the drawings the lever *r* is shewn in engagement with the sector and the brake-blocks out of contact with the wheels. *u*, *v* are the links or arms pivoted at $u^1$, $v^1$ respectively to the body of the carriage and connected together at their inner ends by a pin passing through holes therein, one of which holes is elongated so as to allow the said arms to move on their pivots. $v^2$ is the fork with which the arm *v* is provided, the said fork engaging with the downwardly extending arm $r^2$ of the hand lever.

With this construction it will be obvious that, the parts of the mechanism being in the position indicated in full lines in the drawings, the buffer on meeting with an obstruction will cause the rods *j*, *j* to slide inwards in the guides *l*, *l* until they strike the arms *u*, *v* and cause them to take the position indicated in dotted lines in Figure 2. The movement of the arm *v* and of the fork $v^2$ around the pivot $v^1$ will disengage the lever *r* by means of the downwardly extending arm $r^2$ from the notched sector *t* so that the said lever is then pulled forwards by the spring *s* thus forcing the brake-blocks, through the medium of the shaft *q*, (which is rotated by the movement of the lever *r*) arm *p* and rod *o*, against the rear wheels *d*, *d* of the car. On the obstruction being removed the buffer will reassume its normal position under the action of its own weight, but the brake-blocks will remain in their operative position until the lever *r* is pulled back by hand into engagement with the notched sector *t*.

*w* is the cross-bar fitted in inclined slots $w^1$, $w^1$ in the lateral plates *f*, *f* of the buffer portion of the car and *x*, *x* are the rods connected to the said cross-bar *w* and extending backwards into proximity with the arms *u*, *v*. These rods *x*, *x* are supported in guides *y*, *y* on the axle *c* of the front or steering wheels *b*, *b* of the car as shewn clearly in Figure 1. With this arrangement it will be obvious that should the cross-bar *w* strike an object too short to be struck by the buffer the rods *x*, *x* will be pushed upwards in the guides and strike the arms *u*, *v* so as to apply the brake mechanism in the manner above described.

*z*, *z* are projecting blocks upon the cross-piece *g* connecting the lateral plates *f*, *f* of the buffer, the blocks being adapted to brake the front wheels *b*, *b* of the car should the car strike an immovable obstacle, such as a wall, the said blocks being, however, arranged at such a distance from the wheels *b*, *b* that they are only applied in exceptional cases, that is to say, when the object struck is immovable.

In a slightly different construction of our invention the rods connected to the buffer portion of the vehicle are normally held in their outermost position by a spring and are so arranged that when pushed inwards when the buffer strikes an obstacle they strike against a link pivoted at one end to the frame of the vehicle and at the other end to two levers, one of which is pivoted to the brake-blocks and other to a hand lever which engages with a notched sector. In this arrangement, therefore, when the buffer portion is pushed inwards the pivoted links force the brake-block against the wheel and also rotate the hand lever so that it engages with one of the notches in the sector and prevents the brake-blocks from leaving the wheel.

It will be obvious that with our construction of buffer apparatus the brake will be applied also when the sides of the said buffer portion collide with an obstacle, it not

being necessary that both rods *j*, *j* be pressed into contact with the links *u*, *v* as either of the rods *j* alone can operate the lever *r* by striking the link against which it operates.

The front portion of the vehicle may be provided with a projecting guard near the surface of the ground and so arranged that, should the vehicle collide with a person, the said person instead of being run over by the vehicle would be slid on to the said guard, and we can also provide our buffer arrangement with ropes both inside, outside and underneath the same, so that even should a person be knocked down by the vehicle he can clutch one of the ropes and so by his weight apply the brake to the vehicle.

It will be obvious that the rods *j*, *j* can be arranged to operate a switch for stopping the motor in addition to applying the brake.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is :—

1. In motor and other cars and vehicles for common roads, the employment of a movable buffer portion in the front thereof, the said buffer being connected with the brake mechanism by suitable intermediate gear so that when it strikes an obstacle the brake is automatically applied, substantially as hereinbefore described.

2. The combination with motor and other cars and vehicles for common roads, of automatic brake mechanism comprising a movable portion fitted to the front of the car or the like and having rods movable in guides, and arms pivoted to the frame of the vehicle, one of which arms has a fork engaging with an arm of a hand lever mounted upon a rocking shaft which controls the brake-blocks normally held out of contact with the wheels against the action of a spring by a notched sector with which the hand lever engages, substantially as described and illustrated.

3. The combination with buffer mechanism of the kind described in Claim 2 of a cross-bar having rearwardly projecting rods working in guides adapted to operate the brake mechanism, substantially as described and illustrated.

4. The combination and arrangement of parts forming the improved brake mechanism for motor and other vehicles for common roads, hereinbefore described and illustrated in the accompanying drawings.

Dated the 27th day of August 1897.

G. F. REDFERN & Co.,
4, South Street, Finsbury, London, Agents for the Applicants.

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